



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANT(S): Shellans

EXAMINER: Shimizu, Matsuichrio

SERIAL NO.: 10/624,661

ART GROUP: 2635

FILED: July 22, 2003

Case No.: PFD-0301

ENTITLED: Tagging and Tracking System

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Dale B. Halling (Dale B. Halling)

Attorney of Record Signature

APPEAL BRIEF

Honorable Commissioner of
Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the final rejection of claims 1-20 of the Office Action dated November 29, 2005. This application was filed on July 22, 2003. Appellant submits this Appeal Brief pursuant to 35 U.S.C. §134 and 37 C.F.R. § 41.37 in furtherance of the Notice of Appeal (& Pre Appeal Brief) filed in this case on December 15, 2005. The fees required under 37 C.F.R. §1.17(b) and any other necessary fees as indicated in the accompanying Appeal Brief Transmittal Letter are attached.

I. Real Party In Interest

The real party in interest is Pathfinder Technology, Inc., a corporation organized and existing under the laws of the state of Colorado, and having a place of business at 3730 Sinton Road, Suite 250, Colorado Springs, CO 80907. See the Assignment recorded at Reel 014320, Frame 0772.

II. Related Appeals And Interferences

There are no appeals or interferences related to the present appeal.

III. Status Of Claims

Claims 1-20 (see Appendix) are pending in this application. Claims 1-20 are rejected and are involved in this appeal.

IV. Status Of Amendments

A Pre-Appeal Brief was filed subsequent to the final rejection of November 29, 2005, on December 15, 2005. There has been no resolution of the substantive rejections.

V. Summary Of Claimed Subject Matter

FIG. 1 is a block diagram of a tagging and tracking system 10 in accordance with one embodiment of the invention. The system includes an electromagnetic transmitter 12 having an output 14. The output 14 impinges on a modulating tag 16. The modulating tag 16 modulates the reflected signal 18 to form an information signal. An electromagnetic receiver 20 receives the reflection containing the information signal. A received output 22 is coupled to a processor 24. The processor 24 decodes the information signal. In one embodiment, the information signal uniquely defines the modulating tag 16. The unique ID may be used to retrieve information from a database 26. For instance, the unique ID may be used to find out that the vehicle associated with the tag 16 was used in a robbery. In one embodiment, the modulating tag 16 includes a tamper proof system 28. The tamper proof system 28 prevents an unscrupulous person from altering the information signal or moving the tag to another vehicle. One application of the system 10 is to replace present license tags with modulating tags 16. The transmitter 12 and receiver 20 in that embodiment may be a standard police radar system. The processor 24 may be the microprocessor in a portable computer the police have in their vehicles. The database 26 may be a standard database stored on the portable computer. The database may be updated by a storage medium or may be updated by transmitting the information over a police radio band. The system may also be used to track boats, planes, railroad cars or just about any other mobile object. (Page 5, lines 1-20, of the specification)

FIG. 3 is a graph of a spectrum 70 of the transmitted signal 72, the Doppler shifted signal 74 and the information signal 76 in accordance with one embodiment of the invention. The transmitted signal 72 is essentially a single frequency signal in one embodiment. The maximum probable Doppler shift might correspond to a speed of two

hundred miles per hour. The information signal 76 is purposely given a frequency that is higher than the maximum probable Doppler shift. The information signal would also have mirror image below the Doppler shift, however this signal is not shown since it is not the preferred signal. The information signal may be amplitude, frequency or phase modulated. While this figure illustrates the case of a continuous wave transmitter, a pulsed or chirped transmitter may also be used. (Pages 6-7, lines 28-29 & 1-8, of the specification)

FIG. 4 is a graph of the periodic information signal 80 in accordance with one embodiment of the invention. The information signal 80 is periodic or cyclical since it is impossible to tell when the modulating tag will be illuminated. The signal 80 has a start bit or slot 82 followed by a number of information slots 84 and then an end bit 82. Note that the end bit or slot 82 may be the same as the start bit 82. In one embodiment, the information signal is a FSK-4 (Frequency Shift Keying) modulation. The start bit is one frequency and each slot represents two bits of information. This compresses the time necessary to send a unique ID. Many other modulation schemes can be used including FSK-16 and PN (Pseudo Noise). (Page 7, lines 9-16, of the specification)

FIG. 6 is a block diagram of a tagging and tracking system 120 in accordance with one embodiment of the invention. This system 120 is similar to the system of FIG. 1 except that it uses the polarization of the reflected signal to carry the information. A source 122 transmits an electromagnetic wave 124 having a certain polarization 126. The electromagnetic wave impinges on the tag 128. The tag 128 alters the polarization 130 of the reflected wave 132. A receiver 134 has an antenna 136 connected to a splitter 138. The splitter 138 is connected to an x-polarization filter 140 and a y-polarization filter 142. Note in some embodiments the splitter 138 and filters are combined. For instance, a birefringent material will separate the x & y polarization of an optical signal. The x & y

signals are detected by the detectors 144, 146. The magnitude of the x & y signals are compared by a comparator 148 and the output 150 provides the information. (Page 8, lines 1-10, of the specification)

The switches 44 are controlled by an integrated circuit 48. The integrated circuit 48 is powered by a battery 50 in one embodiment. In one embodiment, the battery 50 and the integrated circuit 48 are combined. (Page 6, lines 19-20, of the specification, FIG. 2)

FIG. 5 is a carton drawing of a tagging and tracking system 100 in accordance with one embodiment of the invention. The system 100 has a plurality of electromagnetic transmitters (X) 102 and a plurality of electromagnetic receivers (R) 104 located at key locations throughout an area or city. The key locations are generally choke points 106 through which most of the traffic passes. (Page 7, lines 17-21, of the specification, FIG. 2)

VI. Grounds of Rejection to be Reviewed on Appeal

1. Whether claims 8-10 & 12 are anticipated under 35 USC 102(b) by Pidwerbetsky (USPN 6,084,530).
2. Whether claims 1-7 & 15-20 are unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Seal (USPN 6,396,438).
3. Whether claim 11 is unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Shaw (USPN 6,563,417).
4. Whether claim 13 is unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Mish (USPN 6,025,784).
5. Whether claim 14 is unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Mish (USPN 6,025,784) and further in view of Shaw (USPN 6,563,417).

VII. Argument

1. Whether claims 8-10 & 12 are anticipated under 35 USC 102(b) by Pidwerbetsky (USPN 6,084,530).

“A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.” *In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994). Claim 8 requires that the receiver receive a “reflected signal” from the modulating tags. Pidwerbetsky does not receive a reflected signal. Pidwerbetsky is directed to a system using RFID tags. The tag (see FIG. 3) receives an information signal from the interrogator 103 (FIG. 2). The tag does a normal RF detection (See 301, 302, 303, etc) and then responds with its own information signal 306 that modulates a carrier 308 and is transmitted over antenna 301. The present application modulates a reflected signal as opposed to transmitting a new signal. Note that the modulating tag 16 (FIG. 2) has a plurality of conductive traces 42 that are connected together by switches 44. Modulation of the reflected signal is achieved by changing the reflective properties of the tag 16 (See pages 5 & 6, lines 23-29 & 1-2 of the specification). Note that there is no detector or clock recovery as in Pidwerbetsky. In fact the tag does not receive an information signal. Claim 8 is allowable.

Claim 9 requires that the reflected signal be phase modulated. Since Pidwerbetsky clearly does not modulate the reflected signal, he cannot phase modulate the reflected signal. Claim 9 is allowable.

Claim 10 requires a reflected signal that defines a unique identifier. Since Pidwerbetsky clearly does not modulate the reflected signal, he cannot have a unique identifier on the reflected signal. Claim 10 is allowable.

Claim 12 is allowable as being dependent upon an allowable base claim.

2. Whether claims 1-7 & 15-20 are unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Seal (USPN 6,396,438).

The question of obviousness requires that we determine if the references, taken as a whole, would suggest the invention to one of ordinary skill in the art. *Medtronic, Inc. v. Cardiac Pacemakers, Inc.*, 721 F.2d 1563, 220 USPQ 97 (Fed. Cir. 1983).

Claim 1 requires a tag that embeds an information signal on a reflected signal. Neither Pidwebetsky nor Seal show or suggest modulation of a reflected signal. Pidwerbetsky does use the phrase “backscatter modulator” or MBS but the discussion is clearly about modulating the signal 308 generated by the tag, not the reflected signal. Both references are directed to RFID tags. The present application has nothing to do with RFID tags. Claim 1 is allowable.

Claims 2, 4, 6 & 7 are allowable as being dependent upon an allowable base claim.

Claim 3 requires that the information signal be periodic. See the explanation on page 7, lines 9-16 (FIG. 4) which clearly explains that the modulation of the reflected signal is a periodic signal since the tag does not know when it will be illuminated. The Examiner points to modulation schemes BPSK etc. This is not the information signal, this is just how the information signal is modulated. There is no discussion of a periodic signal in Pidwerbetsky, because this would not make sense in his case. The RFID tag receives an information signal from the interrogator and then responds. In the present

application, the tag does not receive an information signal from the transmitter it just reflects the incident light wave. Claim 3 is allowable.

Claim 5 requires the signal is modulated by changing its polarization. The portion of Seal (Col. 14, lines 26-34) pointed to by the Examiner just sets the polarization, it does not change the polarization to encode information onto the signal. Neither Seal nor Pidwerbetsky or the combination show or suggest polarization modulating of a signal. Claim 5 is allowable over the prior art.

Claim 15 requires a tag that polarization modulates a reflected signal. Neither Pidwebetsky or Seal show or suggest modulation of a reflected signal. Pidwerbetsky does use the phrase "backscatter modulator" or MBS but the discussion is clearly about modulating the signal 308 generated by the tag, not the reflected signal. Both references are directed to RFID tags. The portion of Seal (Col. 14, lines 26-34) pointed to by the Examiner just sets the polarization, it does not change the polarization to encode information onto the signal. The present application has nothing to do with RFID tags. Claim 15 is allowable.

Claims 16, 18 & 20 are allowable as being dependent upon an allowable base claims.

Claim 17 requires sending a tamper signal. The Examiner points to Seal element 1410. The only statement in Seal is that the tamper detector is a switch. It does not state that it sends a tamper signal. The switch probably turns off the transponder. This is not a tamper signal. Claim 17 is allowable.

Claim 19 requires that the information signal be periodic. See the explanation on page 7, lines 9-16 (FIG. 4) which clearly explains that the modulation of the reflected signal is a periodic signal since the tag does not know when it will be illuminated. The

Examiner points to modulation schemes BPSK etc. This is not the information signal, this is just how the information signal is modulated. There is no discussion of a periodic signal in Pidwerbetsky, because this would not make sense in his case. The RFID tag receives an information signal from the interrogator and then responds. In the present application, the tag does not receive an information signal from the transmitter it just reflects the incident light wave. Claim 19 is allowable.

3. Whether claim 11 is unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Shaw (USPN 6,563,417).

The question of obviousness requires that we determine if the references, taken as a whole, would suggest the invention to one of ordinary skill in the art. *Medtronic, Inc. v. Cardiac Pacemakers, Inc.*, 721 F.2d 1563, 220 USPQ 97 (Fed. Cir. 1983).

Claim 11 is allowable as being dependent upon an allowable base claim.

4. Whether claim 13 is unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Mish (USPN 6,025,784).

The question of obviousness requires that we determine if the references, taken as a whole, would suggest the invention to one of ordinary skill in the art. *Medtronic, Inc. v. Cardiac Pacemakers, Inc.*, 721 F.2d 1563, 220 USPQ 97 (Fed. Cir. 1983).

Claim 13 is allowable as being dependent upon an allowable base claim.

5. Whether claim 14 is unpatentable under 35 USC 103(a) over Pidwerbetsky (USPN 6,084,530) in view of Mish (USPN 6,025,784) and further in view of Shaw (USPN 6,563,417).

The question of obviousness requires that we determine if the references, taken as a whole, would suggest the invention to one of ordinary skill in the art. *Medtronic, Inc. v. Cardiac Pacemakers, Inc.*, 721 F.2d 1563, 220 USPQ 97 (Fed. Cir. 1983).

Claim 14 is allowable as being dependent upon an allowable base claim.

Summary

All the references cited by the patent Examiner are related to RFID (Radio Frequency Identification Tags). A cursory reading of the present application makes it clear that the “tags” in the present application are not RFID tags. Pidwerbetsky does use the phrase “backscatter modulator” or MBS but the discussion is clearly about modulating the signal 308 generated by the tag, not the reflected signal. This case should never have gone to appeal.

VIII. Claims Appendix

1. A tagging and tracking system, comprising:

an electromagnetic transmitter having an output;

a modulating tag embedding an information signal on a reflection of the output from the electromagnetic transmitter, wherein the modulating tag includes a tamper proof system;

a receiver for receiving the reflection having the information signal, the receiver having a received output; and

a processor coupled to the received output for decoding the information signal.
2. The system of claim 1, further including a database coupled to the processor.
3. The system of claim 1, wherein the information signal is a periodic signal.
4. The system of claim 1, wherein the information signal is modulated at a frequency higher than a probable Doppler shift.
5. The system of claim 4, wherein the information signal is a polarization modulated signal.
6. The system of claim 1, wherein the modulating tag has a battery for power.

7. The system of claim 6, wherein the modulating tag includes an integrated circuit that drives a plurality of switches that create the information signal.

8. A tagging and tracking system, comprising:

a plurality of modulating tags each attached to one of a plurality of mobile units;

a plurality of electromagnetic transmitters positioned in a plurality of key locations;

a plurality of receivers, one of the plurality of receivers receiving a reflected signal from one of the plurality of modulating tags; and

a database coupled to the plurality of receivers comparing the reflected signal to a predetermined signal.

9. The system of claim 8, wherein the reflected signal is a phase modulated signal.

10. The system of claim 8, wherein the reflected signal defines a unique identifier for one of the plurality of modulating tags.

11. The system of claim 10, wherein the database contains an associated group of information related to the unique identifier.

12. The system of claim 8, wherein the plurality of mobile units are motor vehicles.

13. The system of claim 12, wherein the plurality of modulating tags are each a license tag.

14. The system of claim 13, wherein the plurality of key locations are traffic choke points in a city.

15. A tagging and tracking system, comprising:

a plurality of modulating tags attached to a plurality of mobile units, each of the plurality of tags capable of modulating a polarization of a received signal;

an electromagnetic transmitter having an output capable of being pointed at one of the plurality of modulating tags;

an electromagnetic receiver receiving a reflected signal from one of the plurality of modulating tags; and

a processor uniquely identifying the one of the plurality of modulating tags.

16. The system of claim 15, further including a database coupled to the processor, wherein the database contains an information associated with the one of the plurality of modulating tags.

17. The system of claim 15, wherein one of the plurality of modulating tags has been tampered with and reflects a tampered signal.

18. The system of claim 15, wherein each of the plurality of modulating tags has a tamper proof system.

19. The system of claim 18, wherein the information signal is a periodic signal.

20. The system of claim 19, wherein the information signal has a frequency that is higher than a probable Doppler shift.

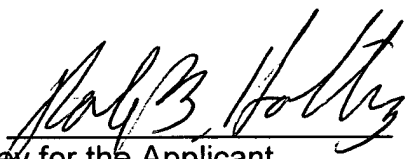
IX. Evidence Appendix

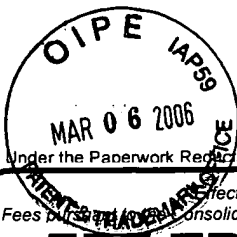
None

X. Related Proceedings Appendix

None

Respectfully submitted,
(Shellans)

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Effective on 12/08/2004.
Fees paid under Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL

For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)
250

Complete if Known

Application Number	10/624,661
Filing Date	7/22/2003
First Named Inventor	Shellans
Examiner Name	Shimizu, Matsuichiro
Art Unit	2635
Attorney Docket No.	PFD-0301

METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	0
Design	200	100	100	50	130	65	0
Plant	200	100	300	150	160	80	0
Reissue	300	150	500	250	600	300	0
Provisional	200	100	0	0	0	0	0

2. EXCESS CLAIM FEES

Fee Description

	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims 20 Extra Claims 0 Fee (\$)0 Fee Paid (\$)0

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims 3 Extra Claims 0 Fee (\$)0 Fee Paid (\$)0

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets 100 Extra Sheets 0 Number of each additional 50 or fraction thereof 0 Fee (\$)0 Fee Paid (\$)0

100 - 100 = 0 / 50 = 0 (round up to a whole number) x 0 = 0

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Fees Paid (\$)

0

Other (e.g., late filing surcharge): Appeal Fee

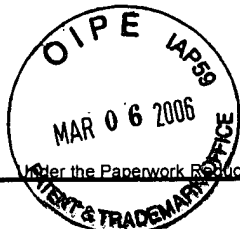
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SUBMITTED BY

Signature	<i>Dale B. Halling</i>	Registration No. (Attorney/Agent) 38170	Telephone 719-447-1990
Name (Print/Type)	Dale B. Halling		Date 2/24/2006

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/624,661
	Filing Date	07/22/2003
	First Named Inventor	Shellans
	Art Unit	2635
	Examiner Name	Shimizu, Matsuichiro
Total Number of Pages in This Submission	Attorney Docket Number	PFD-0301

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input checked="" type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
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<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	Remarks Appeal Brief included in triplicate	

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Date	2/28/2006	Reg. No.	38170

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